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REMARKS

In the present Office Action, claims 1, 38 and 40-49 were examined. Claims 1, 38 and 40-46 are rejected, no claims are objected to, and no claims are allowed.

By this Amendment, no claims have been amended, no claims have been canceled, and no claims have been added. Claims 47-49 have been withdrawn. Accordingly, claims 1, 38 and 40-46 are presented for further examination. No new matter has been added. By this Amendment, claims 1, 38 and 40-46 are believed to be in condition for allowance.

Rejections/Objections under 35 USC §112

The Examiner rejected claim 42, 45 and 46 under 35 U.S.C. §112, first paragraph as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner states that the weight ratio of from 1:20 to 20:1 of metal pyrrhione relative to the metal or metal-containing compound is supported by the specification only when the metal is copper.

The specification of the present application provides support for claims 42, 45 and 46 on at least page 10, lines 1-15, and 23-29, alone or together with page 16, Example 4. These excerpts from the specification illustrate, by way of example using copper, that the weight ratio of metal pyrrhione relative to the metal or metal-containing compound may be from 1:20 to 20:1. Accordingly, Applicants respectfully submit that support for this limitation is found in the present specification. Further, Applicants submit this rejection is untenable and should be withdrawn.

Rejections under 35 USC §102

The Examiner rejected claims 1, 38, 40, 41, 43 and 44 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,916,947 to Morris, et al. Applicants respectfully submit that this rejection is untenable and should be withdrawn.

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Morris, et al. discloses a particle mixture in powder or slurry form which exhibits antifouling properties when incorporated into a carrier comprising zinc oxide (Col. 2, lines 42-44). Additionally, Morris, et al. discloses a "preformulation step . . . which involves either subliming or solvent depositing the photosensitizer over the surfaces of the colloidal zinc oxide prior to suspending the zinc oxide pigment in the vehicle." (Col. 6, lines 10-14). The vehicle comprises a resin, one or more pigments, a suitable solvent for the resin, and various optional additives. (See Col. 5, lines 55-57).

The photosensitizer disclosed by Morris, et al. is preferably substantially insoluble in water, absorbs visible light, and catalyzes the production of peroxides when contacted with zinc oxide, water, oxygen and visible light. (Col. 3, lines 52-56).

In contradistinction, the present invention discloses and claims a biocidal composition comprising composite particles. The composite particles of the present invention contain a shell and a core. The shell of the composite material surrounds the core of the composite particle. The interaction between the shell and the core of the composite particles is disclosed in the specification on at least page 9, lines 6 – 21.

The core of the present invention comprises a metal or a metal-containing compound wherein the metal is a moiety selected from the group consisting of zinc, copper, bismuth, silver, zirconium and combinations thereof. The shell of the present invention contains a metal pyrrithione that is formed by reaction of pyrrithione acid or a water-soluble salt of pyrrithione with a portion of the metal or metal-containing compound of the core. Morris, et al. does not disclose or suggest coating a metal moiety with a water-soluble salt of pyrrithione. On the contrary, Morris, et al. discloses coating colloidal zinc oxide with a water-insoluble photosensitizer. Accordingly, the coating of the surface of zinc oxide disclosed Morris, et al. does not provide a shell wherein the shell comprises the reaction product of a pyrrithione with a portion of the core metal or metal compound.

The inherency argument recited at page 5 of the outstanding Office Action is believed to be untenable. Therein it is stated that the Morris, et al. "particle complex which possess ingredients within the scope of the present invention would inherently possess the same physical parameters as presently claimed..." Applicants respectfully disagree. Morris, et al. discloses that

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patentees' photosensitizer can be zinc pyrithione, as opposed to the instantly claimed "water soluble salt of pyrithione". Since the zinc pyrithione photosensitizer cannot transchelate with the zinc oxide disclosed in that reference, there can be no reaction at the interface of those two compounds in view of the common zinc ion present in both.

It should be readily apparent that the chemical attributes of the instant composite particles are different from those of a colloidal zinc oxide physically covered with (as opposed to chemically reacted with) a photosensitizer because the instant shell comprises the reaction product of pyrithione with a portion of the core. While zinc oxide and zinc pyrithione of the Morris, et al. reference may provide a physical combination, they cannot react to provide a reaction product of pyrithione with core metal as instantly claimed. Further Morris, et al. provides no suggestion or teaching in favor of such a chemical reaction. Accordingly, the instantly claimed composite particles are not disclosed or suggested by Morris, et al. Therefore, Applicants submit that the instant rejection of the claims under 35 U.S.C. §102(e) is untenable and should be withdrawn.

The Examiner rejected claims 1, 38, 40, 41, 43 and 44 under 35 USC §102(e) as being anticipated by U.S. Patent No. 6,162,446 to Hani, et al. Applicants submit Hani, et al. was filed on March 11, 1998 and issued on December 19, 2000. The present application was filed on July 22, 1998; however the date of invention pre-dates the filing date of Hani, et al. Proof of the earlier invention date will be submitted with an Affidavit under 37 CFR §1.131. The Affidavit under 37 CFR §1.131 is currently being prepared and will be sent to the Examiner under separate cover. Applicants submit the Affidavit under 37 CFR §1.131 will remove Hani, et al. as a reference that may be applied against the claims of the instant application.

The Examiner rejected claims 1, 38, 40, 41, 43 and 44 under 35 USC §102(e) as being anticipated by U.S. Patent No. 6,465,015 to Mohseni, et al. Applicants submit Mohseni, et al. was filed on February 23, 1999 and issued on October 15, 2002. The present application was filed on July 22, 1998; however the date of invention pre-dates the filing date of Mohseni, et al. An Affidavit under 37 CFR §1.131 is currently being prepared and will be sent to the Examiner under separate cover. Applicants submit the Affidavit under 37 CFR §1.131 will remove Mohseni, et al. as a reference that may be applied against the claims of the instant application.

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Rejections under 35 USC §103

The Examiner rejected claims 1, 38 and 40-46 under 35 U.S.C. §103(a) as being obvious and unpatentable in view of Morris, et al., Hani, et al., or Mohseni, et al. and in further view of U.S. Patent No. 5,518,774 to Kappock, et al. Applicants respectfully submit that this rejection is untenable and should be withdrawn.

Morris, et al. has been discussed in more detail above. The Hani, et al. and Mohseni, et al. references are the subject of an Affidavit under 37 CFR §1.131 that will be submitted at a later date. Applicants submit the Affidavit under 37 CFR §1.131 will remove Hani, et al. and Mohseni, et al. as references that may be applied against the claims of the instant application.

The rejection based upon the combination of Morris, et al. and Kappock, et al. is untenable since the result sought to be achieved by virtue of the combination runs counter to the teachings of the individual references. For example, Morris, et al. teaches away from transchelation of any kind, much less that of the instantly claimed product, by virtue of patentees' disclosure of a common ion (zinc) for the metal and for the pyrrithione salt. Contrariwise, Kappock teaches complete transchelation of zinc with a soluble pyrrithione salt to produce an insoluble pyrrithione salt, namely zinc pyrrithione. Accordingly, there is no motivation to combine these references since the teachings of one run counter to the teachings of the other reference. Accordingly, the rejection of the instant claims based upon that combination is believed to be untenable and should be withdrawn.

Applicants submit that, absent a motivation to combine the references, a prima facie case of obviousness is lacking. For a prima facie case of obviousness to exist, there must be some objective teaching in the art or knowledge generally available to lead one of ordinary skill in the art to combine the references. See *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). Since no such motivation has been established by virtue of the outstanding Office Action, it is respectfully asserted that a prima facie case of obviousness has not been established. Further, Applicants submit that none of the references, alone or in combination, anticipate or make obvious the invention as presently claimed and that the application is now in condition for allowance.

None of these references, either alone or in combination, disclose or suggest the biocidal composition of the claims as amended herein. More particularly, none of the references disclose

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or suggest a biocidal composition comprising composite particles containing a shell and a core, where the core comprises copper or a copper-containing compound as recited in claims 1, 38 and 42. Additionally, none of the references disclose or suggest a biocidal composition comprising composite particles having a shell comprising copper pyrithione. Accordingly, Applicants submit the present rejection has been overcome and respectfully request the rejection be withdrawn by the Examiner.

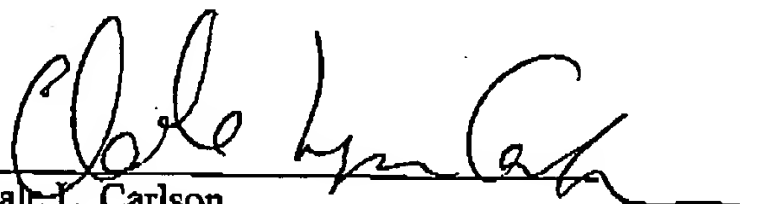
Accordingly, Applicant submits that none of the references, alone or in combination, anticipate or make obvious the invention as presently claimed and that the application is now in condition for allowance. Therefore, Applicant respectfully requests reconsideration and further examination of the application and the Examiner is respectfully requested to take such proper actions so that a patent will issue herefrom as soon as possible.

If the Examiner has any questions or believes that a discussion with Applicant's attorney would expedite prosecution, the Examiner is invited and encouraged to contact the undersigned at the telephone number below.

Please apply any credits or charge any deficiencies to our Deposit Account No. 23-1665.

Respectfully submitted,
David Gavin, et al.

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